MODEL SAFETY EVALUATION FOR PLANT-SPECIFIC ADOPTION OF TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER TSTF-426, REVISION 5, "REVISE OR ADD ACTIONS TO PRECLUDE ENTRY INTO LCO 3.0.3 - RITSTF INITIATIVES 6B & 6C," USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS

1.0 INTRODUCTION

By letter dated [DATE], [LICENSEE] (the licensee) proposed changes to the Technical Specifications (TSs) for [PLANT] using the consolidated line item improvement process (CLIIP). Specifically, the licensee proposed to adopt U.S. Nuclear Regulatory Commission (NRC)-approved Revision 5 to Technical Specifications Task Force (TSTF) Standard Technical Specifications (STS) Change Traveler TSTF-426, "Revise or Add Actions to Preclude Entry into LCO [Limiting Condition for Operation] 3.0.3 – RITSTF [Risk-Informed TSTF] Initiatives 6b & 6c," dated November 22, 2011 (TSTF-426, Reference 1). The licensee stated that the license amendment request (LAR) is consistent with the Notice of Availability of TSTF-426 as part of the CLIIP announced in the *Federal Register* on [DATE] ([ ] FR [ ]).

Traveler TSTF-426 incorporated the approved Topical Report (TR) WCAP-16125-NP-A, "Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown" (TR WCAP-16125, Reference 2), into NUREG-1432, "Standard Technical Specifications Combustion Engineering [(CE)] Plants." TR WCAP-16125 provided the justification for risk-informed TS (RITS) Initiative 6 for nuclear plants with CE-designed nuclear steam supply systems. RITS Initiative 6 modifies selected exigent shutdown actions to allow a risk-informed operating time prior to shutdown.

2.0 REGULATORY EVALUATION

TR WCAP-16125 justified modifications to various TSs to add a Condition for loss of redundant features representing a loss of safety function for a system or component included within the scope of the plant TSs. It would replace Required Actions requiring either a default shutdown or explicit LCO 3.0.3 entry with a Required Action based on the risk significance for the system's degraded condition. The Condition being added is for redundant trains discovered to be inoperable. The Condition only applies to discovery of an emergent condition resulting in redundant trains being inoperable, not from the second train intentionally made inoperable. The completion times (CT) associated with the proposed actions are specified. The CTs are intentionally of short duration to allow for restoring the system to an operable condition, thereby avoiding the risk associated with an immediate controlled shutdown. In all but the TS change for pressurizer power operated relief valves (PORVs), a 24-hour CT is justified. The CT for the pressurizer PORV specification is 8 hours. Table 1 summarizes the TS changes.

{NOTE: TR WCAP-16125 included a change to plant-specific TS on boration systems and this change was approved by the NRC. This system does not appear in the STS and, therefore, the proposed change does not appear in TSTF-426. However, licensees may include a proposed change to the boration systems TS, consistent with WCAP-16125, in LARs to adopt TSTF-426. Therefore the NRC staff has included an evaluation of TS 3.1.9 in its model SE, even though they were not part of TSTF-426. All references to the TS 3.1.9 change in this model SE have been bracketed.}

{NOTE: If the plant-specific analysis does not credit containment spray for iodine removal, the TS 3.6.6A changes are not applicable and those sections of this SE should not be included in

the plant-specific SE. The LAR should state that the TS 3.6.6A changes are not applicable to their plant. All references to the TS 3.6.6A change in this model SE have been bracketed.}

{NOTE: If the plant design does not include a shield building exhaust air cleanup system, an iodine cleanup system, or pressurizer PORVs then those TS changes are not applicable and those sections of this SE should not be included in the plant-specific SE. The LAR should state which, if any, of these TSs are not applicable. All references to these changes in this model SE have been bracketed.}

Table 1

TS	SYSTEM/COMPONENT	CONDITION	CURRENT CT	PROPOSED CT
[3.1.9	Boration System	System inoperable	None/ LCO 3.0.3	24 hours]
3.4.9	Pressurizer	Two groups of Class 1E heaters inoperable	None/ LCO 3.0.3	24 hours
[3.4.11	Power Operated Relief Valves (PORV)	Two PORVs inoperable and not capable of being cycled manually; or Two block valves inoperable	1 hour	8 hours†]
[3.6.6.A	Containment Spray and Cooling System (CSS) (credit taken for iodine removal)	Two containment spray trains inoperable (both containment cooling trains must be operable)	None/ LCO 3.0.3	24 hours ††]
[3.6.8	Shield Building Exhaust Air Cleanup System (SBEACS)	Two trains inoperable	None/ LCO 3.0.3	24 hours †††]
[3.6.10	Iodine Cleanup System (ICS)	Two trains inoperable	None/ LCO 3.0.3	24 hours *]
3.7.11	Control Room Emergency Air Cleanup System (CREACS)	Two trains inoperable (Modes 1-4) for reasons other than an inoperable boundary	Explicit LCO 3.0.3	24 hours **
3.7.12	Control Room Emergency Air Temperature Control System (CREATCS)	Two trains inoperable	Explicit LCO 3.0.3	24 hours
3.7.13	Emergency Core Cooling System Pump Room Emergency Air Cleanup System (ECCS PREACS)	Two trains inoperable for reasons other than an inoperable boundary	None/ LCO 3.0.3	24 hours ***
3.7.15	Penetration Room Emergency Air Cleanup System (PREACS)	Two trains inoperable for reasons other than an inoperable boundary	None/ LCO 3.0.3	24 hours *

† Must include verification that the LCO for auxiliary feedwater is met, which requires both trains to be operable. In addition, the new 8-hour CT does not apply in the STS to PORVs which are leaking and unisolable.

†† Must include verification that the LCO for CREACS is met.

††† Must include verification that at least one train of the CS system is operable.

* Must include verification that at least one train of the CS system is inoperable

** Must include verification that LCO 3.4.16, “RCS Specific Activity,” is met.

*** Not applicable to design, if the ECCS PREACS is required by the plant design basis for ECCS pump room cooling.

The Commission's regulatory requirements related to the content of the TS are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36, "Technical Specifications." Pursuant to 10 CFR 50.36(c) the TS are required to include items in the following specific categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls. The regulation at 10 CFR 50.36(c)(2) states: "When [an LCO] of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met."

Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (Reference 3), describes a risk-informed approach, acceptable to the NRC, for assessing the nature and impact of proposed permanent licensing-basis changes by considering engineering issues and applying risk insights. RG 1.174 also provides risk acceptance guidelines for evaluating the results of such evaluations.

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," of the NRC Standard Review Plan (SRP), NUREG-0800 (Reference 4). Section 19.2 of the SRP states that a risk-informed application should be evaluated to ensure that the proposed change meets the following key principles:

- The proposed change meets the current regulations, unless it explicitly relates to a requested exemption.
- The proposed change is consistent with the defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.
- When proposed changes increase core damage frequency or risk, the increase(s) should be small and consistent with the intent of the Commission's Safety Goal Policy Statement.
- The impact of the proposed change should be monitored using performance measurement strategies.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the licensee's proposed change against the following:

- the requirements of 10 CFR 50.36,
- the STS changes approved for adoption in the Notice of Availability of TSTF-426 as part of the CLIIP announced in the *Federal Register* on [DATE] ([ ] FR [ ]), and
- the methodology approved in TR WCAP-16125, as documented in a safety evaluation (SE) dated May 24, 2010 (Reference 5). TR WCAP-16125 was reviewed against RG 1.174 and SRP Section 19.2.

3.1 Conformance with the Five Key Principles of SRP Section 19.2 as Summarized in the SE of TR WCAP-16125

The changes proposed in TSTF-426 are consistent with NRC-approved TR WCAP-16125. In its SE (Reference 5), the NRC staff evaluated TR WCAP-16125 for conformance with the five key principles of SRP Section 19.2.

3.1.1 Compliance with Current Regulations

Regulations in 10 CFR 50.36 permit either a plant shutdown or other remedial actions specified by TSs when an LCO is not met. The proposed change provides new action requirements for conditions of equipment inoperability which currently require an immediate plant shutdown. Since such remedial actions are permitted per 10 CFR 50.36, the proposed change continues to comply with current regulations, and therefore, satisfy this key principle.

3.1.2 Defense-in-Depth

The proposed change addresses conditions where both trains of a system are inoperable, resulting in a loss of that system's function and a temporary reduction in the defense-in-depth capabilities of the plant. Each proposed change addresses the remaining available alternative system(s) capable of providing mitigation of events, and, where applicable, includes requirements to assure these required backup systems are operable. The reduced level of defense-in-depth is retained by verification that both trains (if applicable) of the backup system are operable. Therefore, this key principle is satisfied by the unique requirements identified for each proposed TS change.

3.1.3 Safety Margins

The proposed change does not have any impact on the use of NRC-approved codes and standards, nor do the changes impact any acceptance criteria used in a plant's licensing basis. Under the current TSs, if an accident occurs during the 6-hour controlled shutdown time of LCO 3.0.3 caused by two trains of these systems being unavailable, it could potentially result in offsite dose limits that do not meet NRC regulatory limits. Since the changes proposed do not modify the design basis of the systems evaluated, extending the allowed outage time (AOT) to 24 hours would have no quantitative effect on the dose consequence as compared to the existing condition. As such, the proposed changes would not significantly reduce the plant's available safety margin, and this key principle is satisfied.

3.1.4 Performance Monitoring

The proposed change would permit continued plant operation for short periods to address emergent equipment failures. Degradation of equipment performance could lead to excessive use of the new action requirements. This is adequately addressed by equipment performance monitoring required by 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and therefore, this key principle is satisfied.

3.1.5 Risk Assessment

The risk of each of the TS LCOs for which action requirements are proposed is evaluated in TR WCAP-16125 by three methods, as described below.

Method 1:

For those TSs governing systems or components which provide mitigation of core damage and large early releases, changes in the core damage frequency and large early release frequency (ΔCDF and ΔLERF, respectively) metrics are calculated using a simplified generic method, and the results are compared to the acceptance guidelines of RG 1.174. This applies to TS 3.1.9, Boration Systems, and TS 3.4.11, PORVs.

For calculations of ΔCDF, a bounding approach was applied to evaluate loss of function of a system by identifying the initiating events for which the system provides mitigation, and assuming that the event goes directly to core damage. No credit was taken for alternate mitigation strategies, and the baseline CDF was effectively assumed to be zero. The initiating event frequencies were taken from NUREG/CR-5750, "Rates of Initiating Events at U. S. Nuclear Power Plants: 1987 – 1995" (Reference 6). The licensee verified that initiating frequencies in NUREG/CR-5750 are bounding for [PLANT].

For ΔLERF, a simplified approach using an event tree was developed to calculate the fraction of core damage events which result in large early releases. The event tree assessed containment isolation status, reactor coolant system (RCS) pressure, secondary side depressurization via the steam generators, thermally-induced steam generator tube rupture (SGTR), and reactor pressure vessel (RPV) lower head failure. Assumptions related to the potential impact on LERF for each of these events, and the associated basis for probabilities used in the analysis, are discussed below:

Containment Isolated – This event defines containment integrity prior to the core damage event. If containment is not isolated, then a large early release will result concurrent with core damage. A probability of 3.0E-3 was applied for an unisolated containment, which is identified as the upper end of the range used in the CE Probabilistic Risk Assessment (PRA) models in TR WCAP-16125.

RCS Pressure – High – This event defines the RCS pressure at the time of core damage. If the pressure is low, then large early releases are assumed not to occur (except via an unisolated containment); otherwise, thermally-induced SGTR and high pressure melt ejection events are further evaluated. All core damage events involving loss-of-coolant accidents (LOCAs) are assumed to result in low or intermediate RCS pressure, and all other events result in high RCS pressure.

Steam Generator Depressurization – This event defines the status of the secondary side, and affects the next event which is the potential for induced SGTR. Depressurization of the secondary side occurs either due to prior operator response or due to failure of a safety relief valve. Based on NUREG-1570, "Risk Assessment of Severe Accident Induced Steam Generator

Tube Rupture" (Reference 7), a probability of 0.9 is assigned for secondary depressurization.

Thermally-induced SGTR Occurs – This event represents a loss of steam generator tube integrity due to thermal stresses during a severe accident, which is assumed to result in a large early release. Two values are used, based on the status of the prior event, for steam generator depressurization. A probability of 0.5 is assigned when the steam generators are depressurized, and 0.01 otherwise. These values are conservative, based on the assumptions regarding tube age and integrity and based on neglecting operator actions to depressurize the RCS after core damage.

RPV Lower Head Failure Results in Containment Failure – This event represents a high pressure failure of the lower head, with an energetic discharge of the molten fuel and direct containment heating, leading to failure of containment. Based on NUREG/CR-6338, "Resolution of Direct Containment Heating Issue for all Westinghouse Plants with Large Dry Containments or Subatmospheric Containments" (Reference 8), the conditional containment failure probability given the event for CE-designed plants is 0.01, which is considered to be a bounding value.

None of the assessed initiating events include either SGTRs or other containment bypass events because the systems being evaluated do not mitigate these events. The NRC staff concludes that the simplified LERF event tree is reasonable and acceptable to support the evaluation of LERF for the scope of TR WCAP-16125.

Method 2:

For TS 3.4.9, Pressurizer Heaters, an evaluation of the increased likelihood of a plant trip due to degraded pressure control is made in order to calculate ΔCDF. The ΔLERF calculation for this TS is the same simplified approach described above for Method 1.

Method 3:

The remaining systems (and associated TS) associated with mitigation of radiological releases with magnitudes less than those associated with LERF are: ICS (TS 3.6.10); SBEACS (TS 3.6.8); PREACS (TS 3.7.15); ECCS PREACS (TS 3.7.13); CREACS (TS 3.7.11); and CREATCS (TS 3.7.12). There is no impact to either CDF or LERF, as the systems are provided to meet design basis dose limits. As described in TR WCAP-16125, an evaluation of the frequency of events which challenge the systems was made and compared to the acceptance guidelines of RG 1.174 applicable to ΔLERF in order to characterize the risk of these lesser releases. TR WCAP-16125 provided additional justification based on the availability of other systems which provide a degree of defense-in-depth for prevention of these releases.

To assess the impact of the unavailability of these systems, TR WCAP-16125 examined the expected iodine releases for three categories of events:

- Beyond design basis scenarios that lead to large early releases,

- Maximum Hypothetical Accident (MHA), and
- LOCA and Non-LOCA Design-Basis Accidents (DBA).

The purpose of this assessment was to show that, using worst case assumptions, the potential accident releases anticipated under the short-term operational conditions proposed by the increased CT for the ICS, SBEACS, PREACS, and ECCS PREACS will be well below and bounded by a large early release. For clarity, the TR WCAP-16125 evaluation was limited to the release of iodine. For each category, iodine releases were estimated assuming various combinations of system availability. The results of this assessment are shown in Table 4.3-1 of TR WCAP-16125, supplemented by RAI responses (Reference 9). The NRC staff reviewed the assumptions and methodology used to determine the bounding iodine release quantities and resulting dose consequences and found that in all cases appropriately conservative assumptions were used.

To reduce the impact of an increased CT for the CREACS, TR WCAP-16125 added conditions to verify that RCS specific activity is within limits and to verify that dose mitigating actions are available in the CR. For limited durations, such as the short-term operational conditions proposed by the increased CT for the CREACS, the NRC staff has accepted credit for the use of respirators and potassium iodide on an interim basis to demonstrate that control room dose limits can be met.

Similarly, TR WCAP-16125 added pre-planned actions to ensure that the impact of loss of post accident temperature control associated with an increased CT for the CREATCS is mitigated. Actions can include use of portable fans, temporary opening of doors or use of normal heating, ventilation, and air conditioning systems. To support this change, administrative controls will be provided to monitor the control room temperature to ensure control room habitability and operability of TS equipment. If compensatory measures impact the control room envelope, the operability of containment and auxiliary building post accident air cleanup systems will be verified. The 24-hour CT proposed in TR WCAP-16125 for the CREACS and the CREATCS is consistent with the allowed 24-hour period for the evaluation of a breach of the control room envelope provided in Traveler TSTF-448 (Reference 10).

Based on an evaluation of the methods and assumptions used to produce the results shown in Table 4.3-1, the NRC staff has reasonable assurance that the postulated accident releases calculated for the short-term operational conditions proposed by the increased CT for the ICS, SBEACS, PREACS, and ECCS PREACS will be well below the LERF releases. In addition, the NRC staff has reviewed the bases for the increased CT for the CREACS and the CREATCS and has determined that the proposed conditions and compensatory measures provide reasonable assurance that control room habitability will be adequately maintained during the proposed 24-hour CT.

External events, including internal fires and floods, were not evaluated in TR WCAP-16125. None of the systems being evaluated provide a primary mitigating function for external events, and therefore these events are not significant to the risk-informed decision.

TR WCAP-16125 also evaluated sensitivity studies for key areas of uncertainty in the analyses. Specifically, TR WCAP-16125 considered uncertainties in the initiating event frequencies which

are the input to the CDF calculations and showed that even assuming a 95 percent upper bound frequency would not result in excessive risk. These were also propagated into the LERF calculations with similar results. TR WCAP-16125 also addressed uncertainties in the thermally-induced SGTR assumptions and SG depressurization assumptions, and demonstrated that the LERF results are not significantly impacted. These sensitivity studies performed to evaluate the key sources of uncertainty in the risk analyses adequately demonstrate the robustness of the results to support the proposed TS changes.

3.2 TS Changes

This section provides a description of each TS change and the NRC staff evaluation of each proposed TS change. The NRC staff's evaluation approves only the proposed changes to the TSs as described below.

[TS 3.1.9 – Boration Systems – Operating

The boration systems are required to ensure that adequate shutdown margin exists to bring the plant to cold shutdown with the most reactive control element assembly not fully inserted into the reactor core and the decay of all xenon poison. The systems also mitigate main steam line breaks and reactor coolant pump restart by preventing a return-to-power scenario (due to cold water injection), and also mitigate anticipated transients without scram (ATWS) events. (Only the ATWS mitigation function is typically included in PRA models because the other functions are not directly related to core damage events.) The plant-specific TSs do not provide any action requirements for two inoperable boration paths, and therefore TS 3.0.3 applies, which requires an immediate plant shutdown. The proposed change provides for a 24-hour CT to restore at least one boration path to operable status, to permit continued operation under an existing action requirement.

The TR WCAP-16125 provided an assessment of the proposed 24-hour CT, which conservatively assumed that all ATWS events would result in core damage, with the following results:

ΔCDF	RG 1.174 Guidance	ΔLERF	RG 1.174 Guidance
1.55E-8/yr	<1.0E-6/yr	1.12E-9/yr	<1.0E-7/yr

The ΔCDF and ΔLERF were assessed based on a bounding once per three year entry into the proposed action requirement from TR WCAP-16125 and assumed that the entire 24-hour duration of the CT is used. The risk results are well below the acceptance guidelines of RG 1.174 as noted in the table.

A reduced level of defense-in-depth is retained by verification of the operability of the high pressure safety injection (HPSI) system and the PORVs. The HPSI can provide boration of the reactor after RCS pressure is reduced to less than [1350 psig]; operability is required by TS 3.5.2, 3.5.3, and 3.4.11, which assure operability of at least one HPSI train and one pressurizer PORV and its associated block valve.

TS change provides a new condition for both boration flowpaths inoperable and an associated action requirement to restore at least one path to operable with a 24-hour CT. The TS change

includes a Note to the condition of two boration trains inoperable stating: "Not applicable when second boration train intentionally made inoperable." The TS Bases state: "The Condition is modified by a Note stating it is not applicable if the second [system or component name] is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one [system or component name] is inoperable for any reason and the second [system or component name] is discovered to be inoperable, or if both [system or component name] are discovered to be inoperable at the same time."

The conservatively-calculated risk result is within the acceptance guidelines of RG 1.174, and defense-in-depth is provided by an operable HPSI train. Therefore, the NRC staff finds the proposed new action requirement and 24-hour CT acceptable.]

TS 3.4.9 – Pressurizer

The pressurizer and the Class 1E electrical heaters maintain a liquid-to-vapor interface to permit RCS pressure control during normal operations and in response to anticipated design basis transients. The Class 1E heaters, with their power provided by emergency AC power busses, are used to maintain RCS subcooling during a natural circulation cooldown, and the unavailability of the heaters will extend the time to reach entry conditions for the shutdown cooling system. The unavailability of the Class 1E heaters may complicate steady-state RCS pressure control and may increase the potential of an unplanned reactor trip. However, the availability of additional heaters beyond the two groups required by this TS LCO permit continued RCS pressure control.

The current TS 3.4.9 does not provide any action requirements for two inoperable pressurizer heater groups, and therefore TS 3.0.3 applies, which requires an immediate plant shutdown. The proposed change provides for a 24-hour CT to restore at least one pressurizer heater to operable status, to permit continued operation under an existing action requirement. The unavailability of the Class 1E pressurizer heaters would not have any significant impact on plant transient response, and so there is no quantifiable impact to CDF or LERF. While mitigation of a SGTR is enhanced by the availability of pressurizer heaters, the non-Class 1E heaters can also function if offsite power is available, and plant procedures provide for mitigation of a SGTR without pressurizer heaters, if necessary.

Conservatively, the risk result due to increased likelihood of a reactor trip was calculated by assuming an order-of-magnitude increase in the reactor trip frequency when both Class 1E heaters are inoperable. The risk result is then calculated based on the conditional core damage probability given a reactor trip with no other complications:

ΔCDF	RG 1.174 Guidance	ΔLERF	RG 1.174 Guidance
1.0E-7/yr	<1.0E-6/yr	3.8E-9/yr	<1.0E-7/yr

The ΔCDF and ΔLERF were assessed based on a bounding once per three year entry into the proposed action requirement from TR WCAP-16125 and assumed that the entire 24-hour duration of the CT is used. The risk results are well below the acceptance guidelines of RG 1.174 as noted in the table.

Minimum pressurizer heater capability is supplemented by the normal availability of non-Class 1E heaters for normal plant pressure control, and the availability of plant procedures which provide plant shutdown and cooldown guidance with or without pressurizer heaters. If the available heaters are sufficient to maintain RCS pressure control, normal plant operations can continue. Because unavailability of Class 1E and non-Class 1E heaters would physically result in plant shutdown, the NRC staff does not consider it necessary to specify additional TS or administrative requirements for the non-Class 1E heater availability.

TS 3.4.9 does not contain a Condition for two required groups of pressurizer heaters inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition is being added for two required groups of pressurizer heaters inoperable which requires restoration of at least one required pressurizer heater to operable status within 24 hours. The Condition is modified by a note stating it is not applicable when the second group of required pressurizer heaters is intentionally made inoperable.

The conservatively-calculated risk result is within the acceptance guidelines of RG 1.174, and there is limited impact of plant shutdown and cooldown without pressurizer heaters. Therefore, the NRC staff finds the proposed new action requirement and 24-hour CT acceptable.

{NOTE: NRC staff should delete this paragraph when preparing the plant-specific SE. The following change to the STS was submitted with the Traveler, but would not be part of a plant-specific LAR. NUREG-1432 pressurizer specification and Bases contain plant-specific (i.e., bracketed) references to two groups of required pressurized heaters, implying that some CE plants do not require two groups of pressurizer heaters. However, a review of Combustion Engineering plant Technical Specifications determined that all of the plants require two groups of pressurizer heaters. Therefore, the brackets around these references have been removed as an administrative change. The NRC staff agrees the change is administrative and finds this change acceptable.}

[TS 3.4.11 – Pressurizer Power Operated Relief Valves (PORVs)

The pressurizer PORVs and associated block valves are required to be operable to minimize the potential for a small-break LOCA through a PORV pathway. The PORVs automatically open for RCS pressure control to avoid challenging the primary safety relief valves, and may be manually opened by the operator to control pressure. In the event of a total loss-of-feedwater to the SGs, one or more PORVs may be opened manually to provide for feed-and-bleed cooling of the reactor using once-through cooling from high pressure injection to the RCS. The PORVs may also be used for low temperature overpressure protection during heatup and cooldown. The PORV may be manually operated to depressurize the RCS in response to normal or abnormal transients. The PORV may be used for depressurization when pressurizer spray is not available, a condition that may be encountered during a loss-of-offsite power (LOOP). The PORVs can be manually operated to reduce RCS pressure in the event of a SGTR with a LOOP.

The LAR provides an 8-hour CT to restore at least one PORV or one block valve to operable status before shutdown. This action may only be applied provided the PORV is isolable by its block valve.

The current TS requirement is to close the associated block valve, and if this cannot be accomplished, an immediate plant shutdown is required. The risk result of unavailable PORVs or block valves is primarily attributable to the non-design basis function of providing for feed-and-bleed cooling:

ΔCDF	RG 1.174 Guidance	ΔLERF	RG 1.174 Guidance
1.5E-7/yr	<1.0E-6/yr	1.1E-8/yr	<1.0E-7/yr

The ΔCDF and ΔLERF were assessed based on a bounding once per three year entry into the proposed action requirement from TR WCAP-16125 and assumed that the entire 8-hour duration of the CT is used. The risk results are well below the acceptance guidelines of RG 1.174 as noted in the table.

The primary safety relief valves provide the design basis pressure control function, controlled by TS requirements. The non-design basis feed-and-bleed function is considered to be risk significant, and the proposed change includes a TS requirement to confirm that the LCO for auxiliary feedwater (AFW) is met, which requires both trains to be operable. A reduced level of defense-in-depth is retained by verification of the operability of the both AFW pumps. These requirements assure that mitigation capability is available for those DBAs or anticipated operational occurrences (AOOs) requiring the pressure control and heat removal functions of the PORVs.

In addition, the new 8-hour CT does not apply to PORVs which are leaking and unisolable.

TS 3.4.11, Condition E, states that with two PORVs inoperable and not capable of being manually cycled, close and remove power from the associated block valves within 1 hour and be in Mode 3 in 6 hours and Mode 4 in [12] hours. Condition E is modified to add new Required Actions to verify that LCO 3.7.5, "Auxiliary Feedwater," is met (i.e., all AFW trains are operable) within 1 hour and to restore at least one PORV to operable status within 8 hours. Condition E is modified by a note stating it is not applicable when the second PORV is intentionally made inoperable. A new Condition F is added which applies if the Required Actions and associated CTs of Condition E are not met. Condition F requires being in Mode 3 in 6 hours and Mode 4 in [12] hours.

Condition F, now Condition G, applies when two block valves are inoperable. Proposed Condition G is modified to add new Required Actions to verify that LCO 3.7.5, “Auxiliary Feedwater,” is met (i.e., all AFW trains are operable) within 1 hour and to restore at least one block valve to operable status within 8 hours. Condition G is modified by a note stating it is not applicable when the second block valve is intentionally made inoperable. Subsequent Actions are renumbered.

{NOTE: For plants with TSs that are not based on NUREG-1432, choose one of the following two paragraphs.}

[The licensee confirmed that the pressurizer PORV TS contains requirements equivalent to NUREG-1432 with regard to leaking and unisolable PORVs. The NRC staff verified that the TS are equivalent and therefore acceptable.]

[The licensee modified the pressurizer PORV TS to contain requirements equivalent to NUREG-1432 with regard to leaking and unisolable PORVs. The NRC staff reviewed the modified TS and finds it to be equivalent and therefore acceptable.]

The risk result is within the acceptance guidelines of RG 1.174, and there is an additional restriction on operability of both AFW trains in the TS action. Therefore, the NRC staff finds the proposed new action requirement and the 8-hour CT are acceptable.]

[TS 3.6.8 – Shield Building Exhaust Air Cleanup System (SBEACS) (Dual)]
[TS 3.6.10 – Iodine Cleanup System (ICS) (Atmospheric and Dual)]
TS 3.7.15 – Penetration Room Exhaust Air Cleanup System (PREACS)

The [SBEACS, ICS, and]PREACS function to assure radioactive material released from containment leakage following a DBA is filtered prior to being exhausted to the environment. Each system includes two redundant trains with high efficiency particulate air filters, moisture absorbers, and charcoal adsorbers in the flowpath. [The SBEACS filters leakage from containment into the shield building for dual containment facilities.]The PREACS filters leakage from containment into the penetration room between the containment and the auxiliary building. [The ICS removes elemental iodine directly from the containment atmosphere.]The design basis for [these/this] system[s] is a postulated MHA involving a LOCA with a short duration uncovery of fuel, resulting from a temporary interruption, or significant degradation, of the ECCS flow. The event is assumed to result in significant iodine releases (40 – 50 percent of core inventory) from the fuel into the containment. The containment remains intact, with no more than the design basis leakage permitted by TSs. Releases associated with the MHA are significantly below the release which would occur for a postulated large early release (at least two orders of magnitude lower). [None of these systems/This system does not] provide any mitigation capability for preventing either core damage or large early releases.

The current TSs do not address the condition of two inoperable trains of these systems; therefore, a default LCO 3.0.3 entry is required, resulting in an immediate plant shutdown. The proposed change would provide a 24-hour CT to restore at least one train of the affected system to operable status, to permit continued operation under an existing action requirement.

As noted above, [these/this] system[s] do not provide any core damage or large early release mitigation. Therefore, the risk results are zero for these systems. However, it may be conservatively assumed that if [any of these/this] system[s] [are/is] unavailable following a postulated core damage event, then some radioactive release above design limits, but well below the large early release level, would occur. A bounding estimate for CDF of CE plants was identified as 1E-4/year, so that over a 24-hour period the probability of a significant core damage event which would require the unavailable system, would be:

(1E-4/year) x (24 hours) x (year/8760 hours) = 2.7E-7

Assuming a once per three year entry into the new TS would result in a frequency of a “less than LERF” release of about 9.0E-8/year. This frequency is within the acceptance guidance of RG 1.174 applicable to large early releases, and therefore provides a context for consideration of the risk result for smaller releases.

As noted in TR WCAP-16125, there are also higher frequency DBAs (e.g., rod ejection and reactor coolant pump locked rotor) which are assumed to result in fuel damage and therefore rely upon [these/this] system[s] to filter any containment leakage. These accidents are associated with releases from the fuel into containment two or more orders of magnitude below those associated with the MHA described above, and four or more orders of magnitude below large early releases.

Containment spray can effectively scrub the post-accident containment atmosphere of fission products and therefore reduce reliance upon the downstream air cleanup systems. In order to assure additional defense-in-depth protection for the spectrum of accidents for which [these/this] system[s] provide mitigation, the TS action will include a verification of operability of at least one train of the CS system.

[TS 3.6.8 does not contain a Condition for both SBEACS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition B is added which applies when two SBEACS trains are inoperable and allows 24 hours to restore at least one SBEACS train to operable status and requires verification within 1 hour that at least one train of containment spray is operable. Existing Condition B is renamed Condition C. Condition B is modified by a note stating it is not applicable when the second SBEACS train is intentionally made inoperable.]

[TS 3.6.10 does not contain a Condition for both ICS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition B is added which applies when two ICS trains are inoperable and allows 24 hours to restore at least one ICS train to operable status and requires verification within 1 hour that at least one train of containment spray is operable. Existing Condition B is renamed Condition C. Condition B is modified by a note stating it is not applicable when the second ICS train is intentionally made inoperable.]

TS 3.7.15 does not contain a Condition for both PREACS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition C is added which applies when two PREACS trains are inoperable and allows 24 hours to restore at least one PREACS train to operable status and requires verification within 1 hour that at least one train of containment spray is operable. The subsequent Actions are renumbered. The proposed Condition C is modified by a note stating it is not applicable when the second PREACS train is intentionally made inoperable.

The zero risk result for severe accidents is well below the acceptance guidelines of RG 1.174, and there is an additional restriction on operability of at least one CS train in the TS. Therefore, the NRC staff finds the proposed new action requirements and the 24-hour CTs are acceptable.

<u>TS 3.7.13 – Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)</u>

The ECCS PREACS filters air from the area of the active ECCS components during the recirculation phase of a LOCA to remove volatized iodine resulting from leakage of post accident recirculation fluid from the ECCS systems. As for the SBEACS, ICS, and PREACS discussed above, the design basis for the system is a postulated MHA involving a LOCA with a short duration uncovery of fuel, resulting from a temporary interruption, or significant degradation, of the ECCS flow. During the recirculation phase of ECCS operation following a

LOCA, radioactive water from containment flows through the active portions of the ECCS. The ECCS PREACS assures that any nominal leakage from the ECCS (e.g., pump seals, valve flanges, etc.) is filtered before reaching the environment. Releases associated with the MHA are significantly below the release which would occur for a postulated large early release (at least two orders of magnitude lower). Therefore, this system does not provide any mitigation capability for preventing either core damage or large early releases.

The current TS 3.7.13 does not address the condition of two inoperable trains of the ECCS PREACS; therefore, a default LCO 3.0.3 entry is required, resulting in an immediate plant shutdown. The proposed change would provide a 24-hour CT to restore at least one train of the affected system to operable status, to permit continued operation under an existing action requirement. The NRC staff notes that the current TS do provide a 24-hour CT when both trains are inoperable due specifically to ECCS pump room boundary inoperability.

As noted above, the ECCS PREACS does not provide any core damage or large early release mitigation. However, it may be conservatively assumed that if both ECCS PREACS trains are unavailable following a postulated core damage event, then some radioactive release above design limits (but well below the large early release level) would occur. Since ECCS recirculation is only used for large and medium LOCAs, a bounding estimate for a core damage event during recirculation is made by assuming all large and medium LOCAs go to core damage. The total frequency of these LOCAs was identified as 4E-5/year. Therefore over a 24-hour period the probability of a significant core damage event which would require the ECCS PREACS, would be:

(4E-5/year) x (24 hours) x (year/8760 hours) = 1.2E-7

Assuming a once per three year entry into the new TS, would result in a frequency of a “less than LERF” release of about 4.0E-8/year. This frequency is within the acceptance guidance of RG 1.174 applicable to large early releases, and therefore, provides a context for consideration of the risk result for smaller releases.

As noted in TR WCAP-16125, there are also higher frequency DBAs (e.g., rod ejection and reactor coolant pump locked rotor) which are assumed to result in fuel damage and therefore rely upon these systems to filter any containment leakage. These accidents are associated with releases from the fuel into containment two or more orders of magnitude below those associated with the MHA described above, and four or more orders of magnitude below large early releases.

Unlike for the other radiological filtration systems, the operation of the CS system does not have any mitigating impact on the unavailability of the ECCS PREACS, because the sprays transport the fission products from the containment atmosphere into the sumps, which is the source of recirculation water which is then assumed to leak into the ECCS pump room. Therefore, there is no requirement for operability of the CS system when the ECCS PREACS is inoperable. Some designs of the ECCS PREACS rely upon the system to provide temperature control of the ECCS pump rooms, which may, therefore, impact the operability of the ECCS pumps and equipment. {NOTE: The NRC staff has not evaluated the unavailability of the ECCS pump room cooling function, and therefore, this TS change is prohibited if the ECCS PREACS is required by the plant design basis for ECCS pump room cooling.}

TS 3.7.13 does not contain a Condition for both ECCS PREACS trains inoperable. As a result, this condition would require immediate entry into LCO 3.0.3. A new Condition C is added which applies when two ECCS PREACS trains are inoperable and allows 24 hours to restore at least one ECCS PREACS train to operable status. The proposed Condition C is modified by a note stating it is not applicable when the second ECCS PREACS train is intentionally made inoperable. The subsequent Actions are renumbered.

The change in risk for this TS change related to severe accidents is well below the acceptance guidelines of RG 1.174. Additionally, this TS change is not applicable to plant designs which credit the room cooling function of the ECCS PREACS. Therefore, the NRC staff finds the proposed new action requirement and 24-hour CT acceptable.

TS 3.7.11 – Control Room Emergency Air Cleanup System (CREACS)

The CREACS provides for filtration of outside air delivered to the control room by the ventilation system in the event of radioactive releases of particulates or iodine from containment following an accident involving fuel failures. This is to assure that control room personnel are protected from potential radiation exposures in excess of regulatory limits. The system may also provide protection of control room personnel from chemical or toxic gas releases by isolating the control room air intakes.

The current TS 3.7.11 does not address the condition of two inoperable trains of these systems; therefore, a default LCO 3.0.3 entry is required, resulting in an immediate plant shutdown. The proposed change would provide a 24-hour CT to restore at least one train of the CREACS to operable status, to permit continued operation under an existing action requirement. The current TS already provide a 24-hour CT when both trains are inoperable due specifically to control room pressure boundary inoperability.

In the event of an accident involving radioactive releases without the availability of the CREACS, there would be no direct impact on the capability of the control room staff to perform any actions required to mitigate severe core damage or large early releases, because alternative protective measures would be implemented to reduce the dose impacts. If the accident did not involve severe core damage, control room doses even without the CREACS would be minimal, and therefore the CREACS has no direct role in preventing core damage (i.e., $\Delta CDF = 0$). If a core damage accident did occur with CREACS unavailable, then the bounding impact would be to simply assume the event proceeded to a large early release based on the unavailability of the control room personnel to perform any mitigating actions. This assumption would be very conservative, since large releases occur primarily due to containment bypass accidents, and control room actions following core damage do not prevent the release from occurring.

A bounding estimate for CDF of CE plants was identified as 1E-4/year, so that over a 24-hour period the probability of a significant core damage event, which with the CREACS unavailable is assumed to proceed to a large early release, would be:

(1E-4/year) x (24 hours) x (year/8760 hours) = 2.7E-7

Assuming a once per three year entry into the new TS, and assuming the entire 24-hour duration of the CT is used, the conservatively calculated ΔLERF is about 9.0E-8/year. This ΔLERF, and the zero ΔCDF, are below the acceptance guidelines of RG 1.174.

A significant contributor to control room radiological hazards was identified in TR WCAP-16125 from the release of radioactive RCS fluid from a SGTR event. A required TS action to verify LCO 3.4.16, "RCS Specific Activity," is met will be included in the new proposed action to provide additional defense-in-depth.

TR WCAP-16125 also addressed a TS action to require initiation of mitigating actions to lessen the effects of potential hazards of smoke, chemical, radiological, or toxic gas releases. The NRC staff considers the specific hazards and compensatory measures to be plant-specific, and did not find sufficient information to conclude that the proposed changes are acceptable for these events without a plant-specific evaluation. The RAI response (Reference 11) identifies that these mitigating actions were previously reviewed and approved by the NRC staff for Traveler TSTF-448 (Reference 10). TSTF-448 authorizes a generic TS change to permit a 24-hour CT when the control room boundary is inoperable, and includes the same mitigating actions to assure protection of the control room staff from non-radiological hazards.

TS 3.7.11, Condition F, applies when two CREACS trains are inoperable due to any reason other than an inoperable control room boundary in Modes 1, 2, 3, or 4 and requires entering LCO 3.0.3 immediately. The TR WCAP-161254 justifies a 24-hour CT for two CREACS trains inoperable for any reason provided that mitigating actions are implemented immediately and it is verified that LCO 3.4.16, "RCS Specific Activity," is met within 1 hour. Condition F is revised to require restoration of at least one CREACS train to operable status within 24 hours and Condition F is moved to Condition C as Required Action C.3. Proposed Condition C is modified by a note stating it is not applicable when the second CREACS train is intentionally made inoperable. Existing Condition C requires entering Mode 3 in 6 hours and Mode 5 in 36 hours. Existing Condition C is moved to Condition F and is modified to apply to the new Condition C.

The requirement to immediately "initiate action to implement mitigating actions" in Required Action C.1 is the same as in existing Action B.1. Action B.1 was added by approved TSTF-448, (Reference 10). Condition F is equivalent to the action to take mitigating actions in Condition B.

Based on the risk result being below the acceptance guidelines of RG 1.174 and the additional restriction on meeting RCS specific activity limits in the TSs, the NRC staff finds the proposed new action requirement and 24-hour CT acceptable.

<u>TS 3.7.12 – Control Room Emergency Air Temperature Control System (CREATCS)</u>

{NOTE: For some CE plants, the cooling function is integrated with the system used for air cleanup in TS 3.7.11. If applicable, NRC staff should modify the model SE to address this when preparing the plant-specific SE.}

The CREATCS provides for temperature control of the control room when it is isolated during accident conditions. This assures control room temperature will not exceed equipment operability requirements.

The current TS 3.7.12 requires entry into LCO 3.0.3 when both CREATCS trains are inoperable. The proposed change would provide a 24-hour CT to restore at least one CREATCS train to operable status, to permit continued operation under an existing action requirement.

TR WCAP-16125 stated that the unavailability of the CREATCS has a negligible impact on severe accident risk, based on long room heatup times, availability of alternate cooling strategies, and alternate means to control emergency systems locally. The NRC staff reviewed the basis for this conclusion and considered the potential plant impacts if an accident occurred which isolated the control room while the CREATCS was inoperable.

If an accident occurred which isolated the control room without cooling, and core cooling was being maintained by the ECCS, then there would be negligible radiological consequences and the operators could simply unisolate and realign the normal control room ventilation system to provide continued cooling of the CR. Therefore, there would be no impact on CDF (i.e., $\Delta CDF = 0$).

If core damage occurred after the accident and the control room needed to remain isolated without cooling, the bounding impact would be to simply assume the event proceeded to a large early release based on the unavailability of the control room personnel to perform any mitigating actions. This assumption would be very conservative, since large releases occur primarily due to containment bypass accidents, and control room actions following core damage do not prevent the release from occurring.

A bounding estimate for CDF of CE plants was identified as 1E-4/year, so that over a 24-hour period the probability of a significant core damage event, which with the CREATCS unavailable is assumed to proceed to a large early release, would be:

(1E-4/year) x (24 hours) x (year/8760 hours) = 2.7E-7

Assuming a once per three year entry into the new TS, and assuming the entire 24-hour duration of the CT is used, the conservatively calculated $\Delta LERF$ is about 9.0E-8/year. This $\Delta LERF$, and the zero ΔCDF, are below the acceptance guidelines of RG 1.174.

Defense-in-depth is provided by alternative control room cooling actions and by the capability for local operation of equipment, if necessary. These actions are typically found in plant procedures, and are not required to be implemented by TS controls. The licensee confirmed in the LAR that plant procedures can establish temporary alternate means of control room cooling.

TS 3.7.12, Action E, applies when two CREATCS trains are inoperable in Mode 1, 2, 3, or 4 and requires entering LCO 3.0.3 immediately. TR WCAP-16125 justifies a 24-hour CT for two CREATCS trains inoperable. Condition E is revised to require restoration of at least one CREATCS train to operable status within 24 hours. Condition E is moved to Condition B and the subsequent Actions are renumbered. Proposed Condition B is modified by a note stating it is not applicable when the second CREATCS train is intentionally made inoperable. Existing Condition B, now Condition C, which requires entering Mode 3 in 6 hours and Mode 5 in 36 hours, is modified to apply to the new Condition B.

Based on the risk result being below the acceptance guidelines of RG 1.174, the NRC staff finds the proposed new action requirement and 24-hour CT acceptable.

TS 3.6.6A – Containment Spray and Cooling Systems (credit taken for iodine removal)

{NOTE: NUREG-1432 contains TS for two containment spray and cooling system designs – one for plants that credit containment sprays for iodine removal (3.6.6A) and one for that plants that do not (3.6.6B). TS 3.6.6B is not affected by the proposed change.}

The CS system and the containment coolers provide containment heat removal following accidents which release high energy steam to the containment. In addition to the heat removal function, the CS system enhances post accident fission product removal. CE plant designs that credit the fission product removal function of the CS system implement LCO 3.6.6A. Each train of the CS system provides a nominal 50 percent of the cooling function, and similarly each train of the containment coolers provides 50 percent of the cooling function; thus the combined capacity of both systems is 200 percent.

TS 3.6.6A provide for an explicit LCO 3.0.3 entry when less than 100 percent containment cooling capacity is available (i.e., any combination of three or more trains inoperable).

For TS 3.6.6A, when both CS trains are inoperable, and therefore the fission product removal function is not available, an explicit LCO 3.0.3 entry is required. The RAI responses (Reference 11) proposed a 24-hour CT for TS 3.6.6A consistent with the other iodine removal TS changes. The RAI responses also identified that the TS-required operability of the containment coolers would provide a similar iodine removal function such that additional TS requirements for operability of other iodine removal systems would not be required. A TS action for operability of the CREACS was proposed to assure additional defense-in-depth for control room functionality when both CS trains are inoperable during the 24-hour CT.

Based on the information in TR WCAP-16125, the challenge frequency of the CS system for fission product removal is identical to the challenge frequency described for the SBEACS, ICS, and PREACS, described above. Similar to those analyses, it may be conservatively assumed that if both CS trains are unavailable following a postulated core damage event, then some radioactive release above design limits, but well below the large early release level, would occur. A bounding estimate for CDF of CE plants was identified as 1E-4/year, so that over a 24-hour period the probability of a significant core damage event which would require the unavailable system would be:

(1E-4/year) x (24 hours) x (year/8760 hours) = 2.7E-7

Assuming a once per three year entry into the new TS would result in a frequency of a “less than LERF” release of about 9.0E-8/year. This frequency is within the acceptance guidance of RG 1.174 applicable to large early releases, and therefore, provides a context for consideration of the risk result for smaller releases.

When the function of the CS for fission product removal is unavailable, then the operability of the CREACS, which provides for filtration to protect control room habitability, will be verified as a defense-in-depth measure.

TS 3.6.6A contains Condition G which applies when two containment spray trains are inoperable or any combinations of three or more trains are inoperable. Condition G requires entering LCO 3.0.3 immediately. The proposed change modifies Condition G to no longer apply

when two containment spray trains are inoperable. A new Condition C is added for two containment spray trains inoperable with Required Actions to verify within 1 hour that at least one train of CREACS is operable and to restore at least one train within 24 hours. Condition C is modified by a note stating it is not applicable when the second containment spray train is intentionally made inoperable.

TR WCAP-16125 states that Condition C is applicable when two containment spray trains are inoperable provided that at least one containment air cooler is operable. This restriction is imposed by Condition G, which addresses any combination of three or more trains inoperable with a Required Action to enter LCO 3.0.3 immediately. Condition B provided a shutdown track for Condition A. Condition B is eliminated and Condition F is revised to provide a shutdown track for all Conditions. Existing Condition C is renamed Condition B.

The zero risk result for severe accidents is well below the acceptance guidelines of RG 1.174, and there is verification of operability of the CREACS. Therefore, the NRC staff finds a new action requirement with a 24-hour CT would be acceptable for the case of both CS trains inoperable.]

3.3 TS Bases Changes

TSTF-426 included and the licensee submitted the following TS Bases changes.

- A reference to the NRC-approved TR WCAP-16125 has been added to the reference section of the TS Bases for each TS affected in TSTF-426.
- Revisions to reflect the changes to the TS.
- For TS Bases 3.6.6A and TS Bases 3.6.8, the order of two references is revised so that the references are numbered in order of appearance.
- The SE for TR WCAP-16125-NP-A noted that the 24-hour CT is not applicable if the ECCS PREACS is required by the plant design basis for ECCS pump room cooling. This is reflected in a Reviewer's Note to the Bases of the new Condition C for TS Bases 3.7.13.
- For all affected TS, a Note on each applicable condition was added that states: "Not applicable when second [system or component name] intentionally made inoperable." The Bases are revised to provide additional explanation of the Note: "The Condition is modified by a Note stating it is not applicable if the second [system or component name] is intentionally declared inoperable. The Condition does not apply to voluntary removal of redundant systems or components from service. The Condition is only applicable if one [system or component name] is inoperable for any reason and the second [system or component name] is discovered to be inoperable, or if both [system or component name] are discovered to be inoperable at the same time."

The NRC staff determined that TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 2, 1993 (58 FR 39132).

3.4 Summary

The NRC staff has reviewed the proposed change against approved Traveler TSTF-426, which was based on approved TR WCAP-16125 (using the five key principles of risk-informed decision making) and concludes that the proposed change is acceptable. Appropriate TS notes are provided which assure that the loss of safety function action requirements are not applicable for operational convenience and that voluntary entry into these action requirements in lieu of other alternatives that would not result in redundant systems or components being inoperable are prohibited.

The NRC staff further notes that the proposed change does not alter the regulations for notifications and reports required by 10 CFR Part 50 involving the loss of safety function, and that any plant-specific license amendment which provides a condition to address a loss of safety function would not obviate the requirement for a licensee to provide such notifications and reports.

4.0 STATE CONSULTATION

{NOTE: Per LIC-101, the PM is responsible for contacting the state official and verifying that this statement is correct.}

In accordance with the Commission's regulations, the [Name of State] State official was notified of the proposed issuance of the amendment. The State official had [no] comments. [If comments were provided, they should be addressed here].

5.0 ENVIRONMENTAL CONSIDERATION

{NOTE: Caution per LIC-101: The environmental consideration discussed below is written for a categorical exclusion based on 10 CFR 51.22(c)(9). The PM is responsible to ensure that this is accurate for the specific amendment being issued.}

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding [enter Federal Register citation (XX FR XXXX) and date]. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the

amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. TSTF-426, Revision 5, “Revise or Add Actions to Preclude Entry into LCO 3.0.3 – RITSTF Initiatives 6b & 6c,” dated November 22, 2011. (ADAMS Accession Number ML113260461)

2. TR WCAP-16125-NP-A, Revision 2, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” dated August 2010. (ADAMS Package Accession Number ML110070498)

3. Regulatory Guide 1.174, Revision 2, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” USNRC, dated May 2011. (ADAMS Accession Number ML100910006)

4. NUREG-0800, Standard Review Plan, Section 19.2, “Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance,” dated June 2007. (ADAMS Accession Number ML071700658)

5. Final SE of Pressurized Water Reactor Owners’ Group TR WCAP-16125-NP, Revision 2, "Justification For Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown," dated May 24, 2010. (ADAMS Accession Number ML093560466)

6. NUREG/CR-5750, “Rates of Initiating Events at U. S. Nuclear Power Plants: 1987 – 1995,” dated February 1999. (ADAMS Accession Number ML070580080)

7. NUREG/CR-1570, “Risk Assessment of Severe Accident Induced Steam Generator Tube Rupture,” dated March 1998. (ADAMS Legacy Accession Number 8101290745)

8. NUREG/CR-6338, “Resolution of Direct Containment Heating Issue for all Westinghouse Plants with Large Dry Containments or Subatmospheric Containments,” dated February 1996. (ADAMS Accession Number ML081920672)

9. Responses to the NRC RAI on TR WCAP-16125-NP, Revision 1, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” dated August 10, 2009. (ADAMS Accession Number ML092260399)

10. TSTF-448-A, Revision 3, “Control Room Habitability,” dated August 8, 2006, and corrected pages dated December 29, 2006. (ADAMS Accession Numbers ML062210095 and ML063630467)

11. Responses to the NRC RAI #2 on TR WCAP-16125-NP, Revision 1, “Justification for Risk-Informed Modifications to Selected Technical Specifications for Conditions Leading to Exigent Plant Shutdown,” dated July 8, 2009. (ADAMS Accession Number ML091940063)

Principal Contributor: [The model SE was prepared by C. Schulten and was based on the TR SE prepared by A. Howe (Reference 5).]

Date: May 20, 2013